Message

From: Gibbons, Catherine [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=2AC775A35A0945718EDC7E02F50E6C12-GIBBONS, CATHERINE]
Sent: 3/17/2015 4:18:34 PM
To: Newhouse, Kathleen [Newhouse.Kathleen@epa.gov]
Subject: RE: Our old friend...

This is why I hate SOT! Same thing for Alan and the Chrome Nuts...

From: Newhouse, Kathleen
Sent: Tuesday, March 17, 2015 12:02 PM
To: Hogan, Karen; Jones, Samantha; Phillips, Linda; White, Paul; Cogliano, Vincent; Strong, Jamie; Gibbons, Catherine
Subject: Our old friend...

I am poster board #318. Guess who I get to stand next to at SOT?!

212 Poster Board -319 - Testing the Validity of US EPA's Proposed Dermal Slope Factor for Benzo[a]pyrene: Genetic Alteration Signatures in Common Skin Cancers

View Session Detail

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Abstract Body:USEPA's revised toxicological assessment of Benzo(a)pyrene (BaP) was released for public review on September 26, 2014. EPA's Science Advisory Board will evaluate the document in the coming months. The newly revised document proposed a Dermal Slope Factor (DSF) of 0.006 (µg/day)-1. The DSF in usual units is 480 (mg/kg-day)-1, which is far higher than the proposed oral slope factor of 1 (mg/kg-day)-1. If EPA's proposed DSF were true, it would predict that a large fraction of non-melanoma skin cancers in the US are caused by low level dermal exposures to PAHs. These exposures would include exposures to urban soils, to coal tar containing pharmaceuticals, to grilled and charcoal broiled meats, among others. To test this assumption, a literature review was performed to summarize the state of scientific knowledge regarding altered genetic signatures in UV- and PAH-induced non-melanoma skin cancers. UV-induced cancers, both in rodents and humans, display a high frequency of specific mutations in the p53 tumor suppressor gene and a genetic signature of C to T and CC to TT mutations at dipyrimidine sites. Skin cancers in rodents induced by dermal exposure to BaP contain a distinct and separate mutational signature in the H-ras oncogene, the result of A to G transversions at hot-spot codons. Although low levels of p53 mutation have been reported in PAH-induced mouse skin cancers, the researchers do not implicate them as causal events in mouse skin tumorigenesis. Furthermore, mutations observed in the H-ras oncogene contain the UV mutational signature, not the PAH signature. The BaP dermal slope factor has far reaching implications, because BaP is EPA's indicator PAH, which is used to assess the risks posed by all PAH mixtures using USEPA's Relative Potency Factors for other potentially carcinogenic PAHs. The potential impact of the proposed DSF on human health risk assessments is discussed.